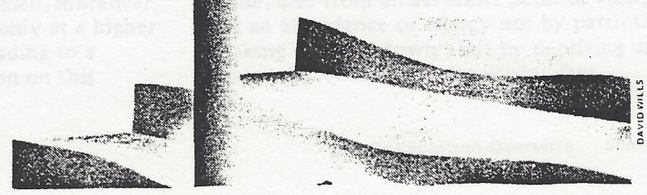
What the world suffers from is not a numerical but a velocity overpopulation.

SLOW IS BEAUTIFUL

by Leopold Kohr

My title is not to improve on Dr. Schumacher's fetching phrase but to stress an aspect of the connection between the theory of size and the energy crisis which reveals the problem not only in its spatial but also in its time dimension, which every problem of space implies. For size is to time what speed is to space, which is nearly but not quite the same as what Maurice Maeterlinck expressed so beautifully when he said, "Space is frozen time, time is molten space."

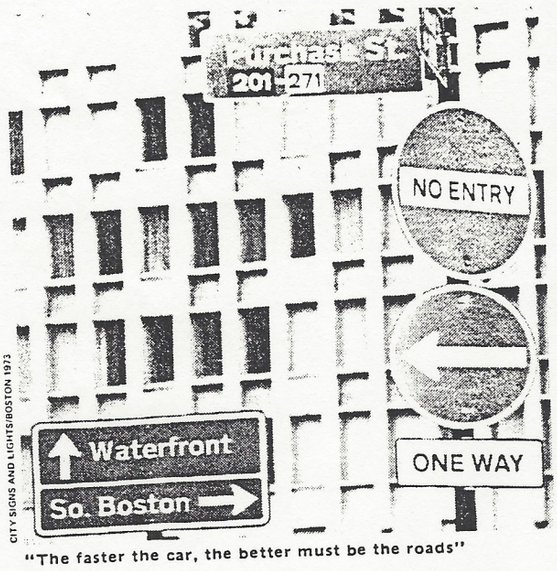
I have tried to formulate the connection between the two in what I have called the *Velocity Theory of Population*, according to which aggregates, be they of atoms or humans, increase in mass not only through an addition to their numbers but also through an increase in the speed with which their components move. It is similar to the *Quantity Theory of Money*, according to which inflation can result not only if more money is put into circulation but also if the same amount is starting to circulate at too great a speed, such as happens when people lose faith in their government. Americans may love loveable Jimmy Carter. But their trust in his leadership is reflected more by the inflationary speed with which they try to get rid of the money he has proved unable to control than by his standing in the Gallup Poll. It matters little whether more dollars are



DAVID WILLS

Leopold Kohr, a citizen of Salzburg, Austria (pop. 108,000), has been saying that Small Is Beautiful longer than E.F. Schumacher and with greater humor and equal pith. Kohr's books, The Breakdown of Nations, The City of Man, Development Without Aid, and The Overdeveloped Nations prescribe elegant, convivial cures for the pathologies and diseconomies of scale.

This article is part of a paper which Kohr prepared for "Technology: Over the Invisible Line?", a conference planned by Jerry Mander, Stephanie Mills, and Lee Swenson and sponsored by the Foundation for National Progress. It was held this March at Mills College in Oakland, California. –SB



CITY SIGNS AND LIGHTS/BOSTON 1973

"The faster the car, the better must be the roads"

THE EXPLODING CITY, N.Y.T.

Commuters and pushers in Tokyo subway

printed or not. What did matter a few months ago was the trust-inspiring victory of America's Ice Hockey Team over the Soviet Union's which temporarily so permeated the national soul that one of its instant effects was a rise of the dollar on foreign exchanges.

A more concrete example of the size-increasing effect of velocity is represented by the emergency exits in theatres. As the term implies, these are not needed under normal conditions, when an audience leaves at normal pace. They are needed only in case of panic when, as a result of gunshots or fire, an audience tries to leave at an accelerated pace. A faster pace has the same effect as an increase in numbers, turning a numerical audience of let us say 1,000 effectively into an audience of 2,000 or 3,000. This is why theatres must adjust their exits not to the numerical but the effective size of the groups they entertain – that is numerical size multiplied by speed. Hence the mass-reducing exhortation, "In case of fire walk, do not run."

What applies to theatres applies also to cities and states. Motorized progress along with advances in communication facilities has made it possible for cities to expand beyond the original confining walls and boundaries, enlarging first their territories and, in their wake, the effective if not the numerical size of their populations. The faster the car, the better must be the roads, and the further can the citizens live from the centre of their activities. But the further they live, the geometrically greater become the distances they must travel considering that they are now further away not only from their working places but from their friends, the theatres, the markets, the schools, their amusement areas, so that a move away from the city by 1 mile does not add 2 miles for the journey to and fro but perhaps 20 miles in daily travel. Hence the geometric increase in fuel consumption with every arithmetic expansion of a city.

When I moved 10 miles away from my office at the University of Puerto Rico, my car travels increased from zero to 60 miles, which, moreover, could be economically negotiated only at a higher than otherwise necessary speed, leading to a further increase in fuel consumption on this ground too. And since added speed has a mass-increasing effect, every outward expansion in a normally sized population develops all the costly symptoms of overpopulation with all this entails in traffic jams, accidents, and crime, as well as prohibitive road-building, coordination, administration, and policing costs. Indeed, what the world has come to suffer from is not a numerical but a velocity overpopulation. Anyone flying across its surface can see that numerically the world is still half empty.

The question is: how can one reduce the oil consuming speeds which our integrated large-scale way of life has made necessary? By exhorting us to drive slowly? This would lead to economic ruin if one realizes that, as I have read the other day, in an insignificant provincial town such as Linz, the capital of Upper Austria, fully 70% of the population depends on motorized means of transport. Imagine what this means in terms of OPEC's imperialist grip around the neck of valiant Jimmy Carter who thinks he is the head of a free society. No, the only way that can induce us to reduce our speed of movement and, along with it, make intermediate technology both adequate and appropriate is by a return to a spatially more contracted, leisurely, and largely pedestrian mode of life that makes high speeds not only unnecessary but uneconomical, as a Concorde would be for crossing the Bay of San Francisco. Moreover, it would enable us to divert our resources from the sterile integration of unnecessarily large social environments to the beautification of our concentrated urban neighbourhoods which, as the cities of antiquity and the Renaissance have shown, can be achieved by simply using the one source of energy which exists in inexhaustible abundance but has been made uneconomical by our global involvements – the nonpolluting muscle power of animal and man. In other words, slow is beautiful in an appropriately contracted social environment of beehive density and animation not only from a political and economic but, in the most literal sense, also from an aesthetic point of view, releasing an abundance of energy not by patriotically making us drive slowly, but by depriving us materially of the need for driving fast.

THE EXPLODING CITY, N.Y.T.

FOR BETTER URBAN LIVING ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT 1978

↑ London Street, Norwich, England, before and after 1967 — when cars were banned.

← Morning in Paris, 1925, photograph by Herbert Bayer

This does not mean that a return to smaller environments entails the destruction of existing cities and states. All it requires is a change in their structure. In the case of urban sprawls, it means the superimposition of a federal pattern by urbanizing the suburbs – that is by concentrating the bulk of a citizen's activities in their immediate neighbourhoods. Live where you work, and work where you live. This makes motorized transport largely superfluous. When I lived in Paris as a student some 50 years ago, I went to see glamour spots such as the Grands Boulevards, the Champs Elysees or Montmartre perhaps twice a year – for sightseeing. The reason for this was that there was hardly anything in the rest of the vast metropolis which could not be found in rival splendour in the *Quartier Latin* where I had my room and which, like all other *arrondissements* of Paris, was not a suburb but a highly autonomous and self-sufficient little city in its own right with all the glamour, centres, offices, theatres, schools, needed for keeping its citizens content within the confines of their animated unharassed pedestrian neighbourhoods. This reduced dependence on motorized means of transport to 10% of what it is today when parking places have become so scarce that, if by some outrageous luck you find one, it is ominously considered a signal of conjugal infidelity on the part of your spouse.

If urbanizing the suburbs represents a giant step towards the solution of the energy crisis at the level of cities, cantonizing the state is the answer at the national level. If the one means the superimposition of a federal structure on an urban area, the other entails the imposition of a confederal pattern on national complexes of great size, thereby replacing the costly transport ridden centralized interdependence (of which Henry Charles Lurey said, "It is the heaviest tax on land and labour") by a dike-like system of small regions of high political autonomy and economic self-sufficiency.

Summing up the conclusions of the size interpretation of history and velocity theory of population in their bearing on the energy crisis, let me stress once again: the answer lies not in the search for new sources of fuel for driving our current means of production, but in searching for means of production and a correspondingly decelerated way of life which, without lowering our living standards, which require less mechanical energy. In Schumacher's terms, this means not a more advanced but an intermediate form of technology. But since intermediate technology is adequate, efficient, and appropriate only in societies of limited size, it follows that it cannot work unless we are willing to replace first the present system of large powers, common markets, united nations, and what have you by the mobile balance of a system of small states as envisioned by St. Augustine, who said to the ancient Romans, "What glory is there in the largeness of empire, bright and brittle like glass, and forever in fear of breaking." ■